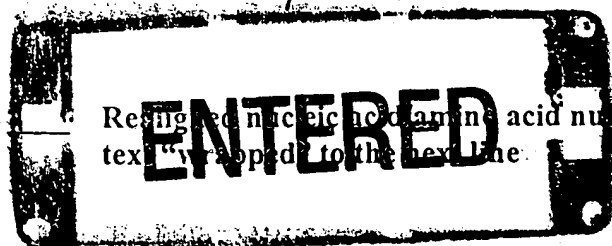# CRF Errors Edited by the STIC Systems Branch

Serial Number: /0/076,839A

CRF Edit Date: 7/20/04

Edited by: AZ

_____ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text wrapped to the next line.

ENTERED

_____ Corrected the SEQ ID NO. Sequence numbers edited were:

_____

_____ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

_____

_____ Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

_____ Inserted mandatory headings/numeric identifiers, specifically:

_____

_____ Moved responses to same line as heading/numeric identifier, specifically:

_____

Other: Sequence 2 - corrected misaligned amino acid numbers

_____

_____

OIPE

RAW SEQUENCE LISTING   DATE: 07/20/2004
PATENT APPLICATION: **US/10/076,839A**   TIME: 18:21:16

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

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   3 <110> APPLICANT: MAOKA, Tetsuo
   4         HATAYA, Tatsuji
   6 <120> TITLE OF INVENTION: Full-length Genomic RNA of Papaya Leaf-Distortion Mosaic
Virus
   8 <130> FILE REFERENCE: 382.1036
  10 <140> CURRENT APPLICATION NUMBER: 10/076,839A
  11 <141> CURRENT FILING DATE: 2002-02-15
  13 <150> PRIOR APPLICATION NUMBER: JP 2001-040523
  14 <151> PRIOR FILING DATE: 2001-02-16
  16 <160> NUMBER OF SEQ ID NOS: 4
  18 <170> SOFTWARE: PatentIn Ver. 2.0
  20 <210> SEQ ID NO: 1
  21 <211> LENGTH: 10155
  22 <212> TYPE: RNA
  23 <213> ORGANISM: Papaya Leaf-Distortion Mosaic Virus
  25 <220> FEATURE:
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  27 <222> LOCATION: (136)..(9942)
  29 <220> FEATURE:
  30 <221> NAME/KEY: modified_base
  31 <222> LOCATION: 1
  32 <223> OTHER INFORMATION: n = a or deletion
  34 <220> FEATURE:
  35 <221> NAME/KEY: modified_base
  36 <222> LOCATION: 10155
  37 <223> OTHER INFORMATION: n = a or deletion
  39 <400> SEQUENCE: 1
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  42 ucauauugug caauucaaau cuuugcauua auucaacauu uccagcuuuu aaaacgaaua 120
  44 acacacacag acaac aug ucg auu guu auu ggu gau uuu ucc auc cca cuc    171
  45               Met Ser Ile Val Ile Gly Asp Phe Ser Ile Pro Leu
  46                 1               5                  10
  48 auc ugc aga acu gag cag auu gaa ugu guu cgu cuu guu ccu gga aca    219
  49 Ile Cys Arg Thr Glu Gln Ile Glu Cys Val Arg Leu Val Pro Gly Thr
  50          15              20                  25
  52 aga guu gaa gaa gug aag acc auu aaa aag guc uua aaa aca cac uac    267
  53 Arg Val Glu Glu Val Lys Thr Ile Lys Lys Val Leu Lys Thr His Tyr
  54       30              35                  40
  56 caa gaa aua acu cuu ggu ugu acu gau aga ugc gcg ggc cug agc gca    315
  57 Gln Glu Ile Thr Leu Gly Cys Thr Asp Arg Cys Ala Gly Leu Ser Ala
  58 45              50                  55                  60
  60 uac aca aaa acc ucc cuu aag aga gca auu aag gaa aag gau uua acu    363
  61 Tyr Thr Lys Thr Ser Leu Lys Arg Ala Ile Lys Glu Lys Asp Leu Thr
  62          65              70                  75
```

```
64  gca ucu ggc agu ugu uuc cac ugu ggc cuu aga gca caa auc gga gag   411
65  Ala Ser Gly Ser Cys Phe His Cys Gly Leu Arg Ala Gln Ile Gly Glu
66              80              85                  90
68  ggu aga aaa agg gua gaa uua gca ccc auu uca guc aug gag gau guu   459
69  Gly Arg Lys Arg Val Glu Leu Ala Pro Ile Ser Val Met Glu Asp Val
70          95                  100                 105
72  gaa acu gug gaa caa gua cuu guu cca ugu aug gua gaa gag aag uau   507
73  Glu Thr Val Glu Gln Val Leu Val Pro Cys Met Val Glu Glu Lys Tyr
74      110                 115                 120
76  uau aag gaa guu ucg aau uuc cag aag gcu acg cuc auc gac aaa cca   555
77  Tyr Lys Glu Val Ser Asn Phe Gln Lys Ala Thr Leu Ile Asp Lys Pro
78  125                 130                 135                 140
80  aag cua acu aua gcc cca guu uua aug gca caa ccu gcc caa gug cca   603
81  Lys Leu Thr Ile Ala Pro Val Leu Met Ala Gln Pro Ala Gln Val Pro
82              145                 150                 155
84  agg ccc gcu guu uuu aau gaa aua cga aaa guu cau gag gag aug aag   651
85  Arg Pro Ala Val Phe Asn Glu Ile Arg Lys Val His Glu Glu Met Lys
86              160                 165                 170
88  ucc caa acc ucu gaa aac aag guc uua gaa gag gaa acu caa ugc gcc   699
89  Ser Gln Thr Ser Glu Asn Lys Val Leu Glu Glu Glu Thr Gln Cys Ala
90          175                 180                 185
92  agu gau gca gcg cuu cac cac uua gac gac guu cau gcg ugu aga gcu   747
93  Ser Asp Ala Ala Leu His His Leu Asp Asp Val His Ala Cys Arg Ala
94      190                 195                 200
96  cga gca cag gua ggc auu gaa cgc aua cua gcc aga cau gca agg cau   795
97  Arg Ala Gln Val Gly Ile Glu Arg Ile Leu Ala Arg His Ala Arg His
98  205                 210                 215                 220
100 aga auc gag gcu aga cag caa guu gaa gag gag caa ucg gaa gca uua   843
101 Arg Ile Glu Ala Arg Gln Gln Val Glu Glu Glu Gln Ser Glu Ala Leu
102             225                 230                 235
104 gca gcg uuc gaa ucc uuc uuc aau caa acu cac aga gaa gac aga uau   891
105 Ala Ala Phe Glu Ser Phe Phe Asn Gln Thr His Arg Glu Asp Arg Tyr
106             240                 245                 250
108 gaa ggg aaa guc uua acc auu cga aau ggg auc aca ggc ugg uuu gaa   939
109 Glu Gly Lys Val Leu Thr Ile Arg Asn Gly Ile Thr Gly Trp Phe Glu
110         255                 260                 265
112 cca aau agg aau gau auu aag aac gca gcu agg cgg agg aag aga gcu   987
113 Pro Asn Arg Asn Asp Ile Lys Asn Ala Ala Arg Arg Arg Lys Arg Ala
114         270                 275                 280
116 aac aag aaa auc ccg uuu guu gca cgu gaa aau gac guc gcg cgg aua   1035
117 Asn Lys Lys Ile Pro Phe Val Ala Arg Glu Asn Asp Val Ala Arg Ile
118 285                 290                 295                 300
120 gaa acu cau gaa ccu aac guc aaa gag gag aca aaa gau gug gag gaa   1083
121 Glu Thr His Glu Pro Asn Val Lys Glu Glu Thr Lys Asp Val Glu Glu
122             305                 310                 315
124 gca acu gac aca uac aca uuu aag aag cag cgc aau gau aaa aag aga   1131
125 Ala Thr Asp Thr Tyr Thr Phe Lys Lys Gln Arg Asn Asp Lys Lys Arg
126             320                 325                 330
128 gug cug aaa gaa aau gug ucu cuu agu aug gcg cgc auu aau gaa cuu   1179
```

```
129 Val Leu Lys Glu Asn Val Ser Leu Ser Met Ala Arg Ile Asn Glu Leu
130         335             340             345
132 guc cga ugu guu aca aaa uua ugc cga aaa gau uca aag gag cuu gag   1227
133 Val Arg Cys Val Thr Lys Leu Cys Arg Lys Asp Ser Lys Glu Leu Glu
134         350             355             360
136 uuu auc ggc aag aga gga agu cuu cga guu caa ugu acu aaa aau ugu   1275
137 Phe Ile Gly Lys Arg Gly Ser Leu Arg Val Gln Cys Thr Lys Asn Cys
138 365             370             375             380
140 ggu uca cga gug aua cua aga cac uug cgu gga gaa cuu aga aga aaa   1323
141 Gly Ser Arg Val Ile Leu Arg His Leu Arg Gly Glu Leu Arg Arg Lys
142         385             390             395
144 gau ugu uau ugg gau cgu auc auu gag aau uuc uuu gaa auu gca gcu   1371
145 Asp Cys Tyr Trp Asp Arg Ile Ile Glu Asn Phe Phe Glu Ile Ala Ala
146         400             405             410
148 gca aag cuu cag aau aag aau cuc aau aac aau gaa ucu gug agg aga   1419
149 Ala Lys Leu Gln Asn Lys Asn Leu Asn Asn Asn Glu Ser Val Arg Arg
150         415             420             425
152 ggg cac agu gga cau auc auu caa uau gau aag uuu aga ggu uug agu   1467
153 Gly His Ser Gly His Ile Ile Gln Tyr Asp Lys Phe Arg Gly Leu Ser
154         430             435             440
156 gga cgg cau uuc gga agu uac auc auu guu agg ggu agc aug gau ggc   1515
157 Gly Arg His Phe Gly Ser Tyr Ile Ile Val Arg Gly Ser Met Asp Gly
158 445             450             455             460
160 aga auu auu gac gcu cgu uca aag auc aca cac agc guu aug auc aac   1563
161 Arg Ile Ile Asp Ala Arg Ser Lys Ile Thr His Ser Val Met Ile Asn
162         465             470             475
164 aug acc cac uac agu gau gca ggu uug agu uuu ugg aaa ggu uuu gau   1611
165 Met Thr His Tyr Ser Asp Ala Gly Leu Ser Phe Trp Lys Gly Phe Asp
166         480             485             490
168 cgu caa uuu auu gac auu cga gau aga ccu aag aac gcu cau gag ugc   1659
169 Arg Gln Phe Ile Asp Ile Arg Asp Arg Pro Lys Asn Ala His Glu Cys
170         495             500             505
172 aag gcc acu aua aac guu gag gag ugu ggc gaa aug gca gcc auu gua   1707
173 Lys Ala Thr Ile Asn Val Glu Glu Cys Gly Glu Met Ala Ala Ile Val
174         510             515             520
176 aac caa cuc cua uuu cca aug ugg aaa aua aca ugc acu caa ugu gga   1755
177 Asn Gln Leu Leu Phe Pro Met Trp Lys Ile Thr Cys Thr Gln Cys Gly
178 525             530             535             540
180 gaa cug cuu gaa aug uug uca caa gaa gag gaa cuu gaa ucu uuc agg   1803
181 Glu Leu Leu Glu Met Leu Ser Gln Glu Glu Glu Leu Glu Ser Phe Arg
182         545             550             555
184 cgu aaa agg agc caa uug gca agu aaa uua ucc agu cuu cau auc aaa   1851
185 Arg Lys Arg Ser Gln Leu Ala Ser Lys Leu Ser Ser Leu His Ile Lys
186         560             565             570
188 uuu ccu uac gug gau cau uuu cuu aau cga uau gag aau agu cug aau   1899
189 Phe Pro Tyr Val Asp His Phe Leu Asn Arg Tyr Glu Asn Ser Leu Asn
190         575             580             585
192 cgg aug aac aca aac uuc gau gcg cac aaa caa auu gca caa auu auu   1947
193 Arg Met Asn Thr Asn Phe Asp Ala His Lys Gln Ile Ala Gln Ile Ile
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RAW SEQUENCE LISTING   DATE: 07/20/2004
PATENT APPLICATION: US/10/076,839A   TIME: 18:21:16

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

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194     590                   595                  600
196 ggc agu cgc aaa gag auu ccu uuu uca aau uua gag cau cug aau gaa   1995
197 Gly Ser Arg Lys Glu Ile Pro Phe Ser Asn Leu Glu His Leu Asn Glu
198 605                   610                  615                  620
200 uug cua auu aag ucg gau aaa cuu guu agc gag gau uuc uau gaa aug   2043
201 Leu Leu Ile Lys Ser Asp Lys Leu Val Ser Glu Asp Phe Tyr Glu Met
202                   625                  630                  635
204 ucu caa ugc cuu uua gag cua aca cgc ugg cau aaa aac agg agc gau   2091
205 Ser Gln Cys Leu Leu Glu Leu Thr Arg Trp His Lys Asn Arg Ser Asp
206                   640                  645                  650
208 uca uuc aag aag gga gag auu cac cau uuc cga aau aag aug uca ggu   2139
209 Ser Phe Lys Lys Gly Glu Ile His His Phe Arg Asn Lys Met Ser Gly
210             655                  660                  665
212 aaa gca caa uuu aau uuu gca uug aug ugu gac aac caa cuu gac aaa   2187
213 Lys Ala Gln Phe Asn Phe Ala Leu Met Cys Asp Asn Gln Leu Asp Lys
214         670                  675                  680
216 aau ggu aac uuc gug ugg ggu gaa aga ggu uau cau gcg aag agg uuu   2235
217 Asn Gly Asn Phe Val Trp Gly Glu Arg Gly Tyr His Ala Lys Arg Phe
218 685                   690                  695                  700
220 uuc uua aac uuc uuu gag aaa guu gau uca acu gac ggu uau aag aaa   2283
221 Phe Leu Asn Phe Phe Glu Lys Val Asp Ser Thr Asp Gly Tyr Lys Lys
222                   705                  710                  715
224 cac aua aug cga guc aac cca aau ggc aca aga caa aca gcu aua gga   2331
225 His Ile Met Arg Val Asn Pro Asn Gly Thr Arg Gln Thr Ala Ile Gly
226             720                  725                  730
228 aaa·cug auu uua ucg acg gau cca ucu acg cua cga caa caa aug aaa   2379
229 Lys Leu Ile Leu Ser Thr Asp Pro Ser Thr Leu Arg Gln Gln Met Lys
230             735                  740                  745
232 ggu agc cca auc aca aga guu cca guu ggu aaa uau ugu aca agc aaa   2427
233 Gly Ser Pro Ile Thr Arg Val Pro Val Gly Lys Tyr Cys Thr Ser Lys
234     750                  755                  760
236 aga gau ggu ugu uac guc uau cca gca ugc ugu guu aca aug gaa gau   2475
237 Arg Asp Gly Cys Tyr Val Tyr Pro Ala Cys Cys Val Thr Met Glu Asp
238 765                   770                  775                  780
240 ggu acg cca uug uuu ucu gau auc aag aug cca acu aag aau cau cua   2523
241 Gly Thr Pro Leu Phe Ser Asp Ile Lys Met Pro Thr Lys Asn His Leu
242             785                  790                  795
244 guc auu gga aau uca gga gau cca aag uau gug gau gua cca agc agc   2571
245 Val Ile Gly Asn Ser Gly Asp Pro Lys Tyr Val Asp Val Pro Ser Ser
246             800                  805                  810
248 uca agu gac aug auu gug gcu aag gaa ggu uau ugu uau cuc aac auu   2619
249 Ser Ser Asp Met Ile Val Ala Lys Glu Gly Tyr Cys Tyr Leu Asn Ile
250         815                  820                  825
252 uuc uug gca aug uug cug aau gug aau gag agu gaa uca aaa uca uuc   2667
253 Phe Leu Ala Met Leu Leu Asn Val Asn Glu Ser Glu Ser Lys Ser Phe
254     830                  835                  840
256 aca aag aag guu aga gau aua auu gua ccg cgu cuc ggu caa ugg cca   2715
257 Thr Lys Lys Val Arg Asp Ile Ile Val Pro Arg Leu Gly Gln Trp Pro
258 845                   850                  855                  860
```

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260 agc uua auc gau guu gca acu gaa ugu uac uuc cua uca gcc uuc cac    2763
261 Ser Leu Ile Asp Val Ala Thr Glu Cys Tyr Phe Leu Ser Ala Phe His
262             865               870               875
264 ccu gaa acg aaa aau gcu gag uug ccc cga auu cua gug gau cau aca    2811
265 Pro Glu Thr Lys Asn Ala Glu Leu Pro Arg Ile Leu Val Asp His Thr
266             880               885               890
268 uca aaa ugu aug cau gug auc gau uca uau ggc ucg cua gac acg caa    2859
269 Ser Lys Cys Met His Val Ile Asp Ser Tyr Gly Ser Leu Asp Thr Gln
270             895               900               905
272 uuu cau guu cug aag gca aau acu gua agu cag cua auu aaa uuc gcc    2907
273 Phe His Val Leu Lys Ala Asn Thr Val Ser Gln Leu Ile Lys Phe Ala
274         910               915               920
276 gau aau gac uug gau ucg gag cug aaa cau uau uua gua ggu gga gac    2955
277 Asp Asn Asp Leu Asp Ser Glu Leu Lys His Tyr Leu Val Gly Gly Asp
278 925               930               935               940
280 cuc cau agc aag caa gcu ccu cag ugu ucc aua aaa uua cuc ugu aaa    3003
281 Leu His Ser Lys Gln Ala Pro Gln Cys Ser Ile Lys Leu Leu Cys Lys
282             945               950               955
284 ugu aua uau agg ccu aaa uug aug agg caa ugc auu gag gaa gag ccu    3051
285 Cys Ile Tyr Arg Pro Lys Leu Met Arg Gln Cys Ile Glu Glu Glu Pro
286             960               965               970
288 uuu uug uug auu uua gcg ugu auc uca cca ggu guu uua uua gcu uua    3099
289 Phe Leu Leu Ile Leu Ala Cys Ile Ser Pro Gly Val Leu Leu Ala Leu
290             975               980               985
292 uau aau agu cag cau uua gaa uua gcu uua aag uac ugg aug agc aag    3147
293 Tyr Asn Ser Gln His Leu Glu Leu Ala Leu Lys Tyr Trp Met Ser Lys
294     990               995               1000
296 caa cag ucu guc gcu gcu uua uuu gca aug auc cau gga cua gcu gca    3195
297 Gln Gln Ser Val Ala Ala Leu Phe Ala Met Ile His Gly Leu Ala Ala
298 1005              1010              1015              1020
300 aaa gua aca guu gcu caa aca uug aau gag cag aga cua aua cuu gaa    3243
301 Lys Val Thr Val Ala Gln Thr Leu Asn Glu Gln Arg Leu Ile Leu Glu
302             1025              1030              1035
304 cgc ggg gcg cgc aau uug auu ucg guc aug gaa acc aua cac aug aca    3291
305 Arg Gly Ala Arg Asn Leu Ile Ser Val Met Glu Thr Ile His Met Thr
306             1040              1045              1050
308 agc cau uca uac caa ccc  gcg cuu cuu caa cua cag guc aug gca aau   3339
309 Ser His Ser Tyr Gln Pro Ala Leu Leu Gln Leu Gln Val Met Ala Asn
310             1055              1060              1065
312 cgu aga gac aug aau ucc acu cuu gau cuc gcc gga uuc agc aua uua    3387
313 Arg Arg Asp Met Asn Ser Thr Leu Asp Leu Ala Gly Phe Ser Ile Leu
314         1070              1075              1080
316 caa ucu gaa gau agu aug uau ugg aug gaa aaa agu uau cuc aug gaa    3435
317 Gln Ser Glu Asp Ser Met Tyr Trp Met Glu Lys Ser Tyr Leu Met Glu
318 1085              1090              1095              1100
320 uua gag gau ucg ugg aac gac uua aag ugg uug gaa aaa uua caa gaa    3483
321 Leu Glu Asp Ser Trp Asn Asp Leu Lys Trp Leu Glu Lys Leu Gln Glu
322             1105              1110              1115
324 aug ugg cga uua uca aag uac uca aua ucu ggg aua agu caa cuu uca    3531
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 07/20/2004
PATENT APPLICATION: US/10/076,839A   TIME: 18:21:17

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

<u>Please Note:</u>
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 1,10155

VERIFICATION SUMMARY   DATE: 07/20/2004
PATENT APPLICATION: **US/10/076,839A**   TIME: 18:21:17

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

L:40 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
M:341 Repeated in SeqNo=1
L:1512 M:283 W: Missing Blank Line separator, <220> field identifier

OIPE

RAW SEQUENCE LISTING   DATE: 07/20/2004
PATENT APPLICATION: US/10/076,839A   TIME: 11:21:53

Input Set : A:\Sequence Listing - text 13july04.txt
Output Set: N:\CRF4\07202004\J076839A.raw

     3 <110> APPLICANT: MAOKA, Tetsuo
     4   HATAYA, Tatsuji
     6 <120> TITLE OF INVENTION: Full-length Genomic RNA of Papaya Leaf-Distortion Mosaic
Virus
     8 <130> FILE REFERENCE: 382.1036
    10 <140> CURRENT APPLICATION NUMBER: 10/076,839A
    11 <141> CURRENT FILING DATE: 2002-02-15
    13 <150> PRIOR APPLICATION NUMBER: JP 2001-040523
    14 <151> PRIOR FILING DATE: 2001-02-16
    16 <160> NUMBER OF SEQ ID NOS: 4
    18 <170> SOFTWARE: PatentIn Ver. 2.0

ERRORED SEQUENCES

Does Not Comply
Corrected Diskette Needed

pp 4,6

   873 <210> SEQ ID NO: 2
   874 <211> LENGTH: 3269
   875 <212> TYPE: PRT
   876 <213> ORGANISM: Papaya Leaf-Distortion Mosaic Virus
   878 <400> SEQUENCE: 2
   879 Met Ser Ile Val Ile Gly Asp Phe Ser Ile Pro Leu Ile Cys Arg Thr
   880 1   5   10   15
   882 Glu Gln Ile Glu Cys Val Arg Leu Val Pro Gly Thr Arg Val Glu Glu
   883   20   25   30
   885 Val Lys Thr Ile Lys Lys Val Leu Lys Thr His Tyr Gln Glu Ile Thr
   886   35   40   45
   888 Leu Gly Cys Thr Asp Arg Cys Ala Gly Leu Ser Ala Tyr Thr Lys Thr
   889   50   55   60
   891 Ser Leu Lys Arg Ala Ile Lys Glu Lys Asp Leu Thr Ala Ser Gly Ser
   892 65   70   75   80
   894 Cys Phe His Cys Gly Leu Arg Ala Gln Ile Gly Glu Gly Arg Lys Arg
   895   85   90   95
   897 Val Glu Leu Ala Pro Ile Ser Val Met Glu Asp Val Glu Thr Val Glu
   898   100   105   110
   900 Gln Val Leu Val Pro Cys Met Val Glu Glu Lys Tyr Tyr Lys Glu Val
   901   115   120   125
   903 Ser Asn Phe Gln Lys Ala Thr Leu Ile Asp Lys Pro Lys Leu Thr Ile
   904   130   135   140
   906 Ala Pro Val Leu Met Ala Gln Pro Ala Gln Val Pro Arg Pro Ala Val
   907 145   150   155   160
   909 Phe Asn Glu Ile Arg Lys Val His Glu Glu Met Lys Ser Gln Thr Ser
   910   165   170   175
   912 Glu Asn Lys Val Leu Glu Glu Glu Thr Gln Cys Ala Ser Asp Ala Ala
   913   180   185   190

RAW SEQUENCE LISTING   DATE: 07/20/2004
PATENT APPLICATION: **US/10/076,839A**   TIME: 11:21:53

Input Set : **A:\Sequence Listing - text 13july04.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

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915 Leu His His Leu Asp Asp Val His Ala Cys Arg Ala Arg Ala Gln Val
916         195                 200                 205
918 Gly Ile Glu Arg Ile Leu Ala Arg His Ala Arg His Arg Ile Glu Ala
919         210                 215                 220
921 Arg Gln Gln Val Glu Glu Glu Gln Ser Glu Ala Leu Ala Ala Phe Glu
922 225                 230                 235                 240
924 Ser Phe Phe Asn Gln Thr His Arg Glu Asp Arg Tyr Glu Gly Lys Val
925                 245                 250                 255
927 Leu Thr Ile Arg Asn Gly Ile Thr Gly Trp Phe Glu Pro Asn Arg Asn
928         260                 265                 270
930 Asp Ile Lys Asn Ala Ala Arg Arg Arg Lys Arg Ala Asn Lys Lys Ile
931         275                 280                 285
933 Pro Phe Val Ala Arg Glu Asn Asp Val Ala Arg Ile Glu Thr His Glu
934         290                 295                 300
936 Pro Asn Val Lys Glu Glu Thr Lys Asp Val Glu Glu Ala Thr Asp Thr
937 305                 310                 315                 320
939 Tyr Thr Phe Lys Lys Gln Arg Asn Asp Lys Lys Arg Val Leu Lys Glu
940                 325                 330                 335
942 Asn Val Ser Leu Ser Met Ala Arg Ile Asn Glu Leu Val Arg Cys Val
943                 340                 345                 350
945 Thr Lys Leu Cys Arg Lys Asp Ser Lys Glu Leu Glu Phe Ile Gly Lys
946         355                 360                 365
948 Arg Gly Ser Leu Arg Val Gln Cys Thr Lys Asn Cys Gly Ser Arg Val
949         370                 375                 380
951 Ile Leu Arg His Leu Arg Gly Glu Leu Arg Arg Lys Asp Cys Tyr Trp
952 385                 390                 395                 400
954 Asp Arg Ile Ile Glu Asn Phe Phe Glu Ile Ala Ala Ala Lys Leu Gln
955                 405                 410                 415
957 Asn Lys Asn Leu Asn Asn Asn Glu Ser Val Arg Arg Gly His Ser Gly
958                 420                 ·425                 430
960 His Ile Ile Gln Tyr Asp Lys Phe Arg Gly Leu Ser Gly Arg His Phe
961         435                 440                 445
963 Gly Ser Tyr Ile Ile Val Arg Gly Ser Met Asp Gly Arg Ile Ile Asp
964         450                 455                 460
966 Ala Arg Ser Lys Ile Thr His Ser Val Met Ile Asn Met Thr His Tyr
967 465                 470                 475                 480
969 Ser Asp Ala Gly Leu Ser Phe Trp Lys Gly Phe Asp Arg Gln Phe Ile
970                 485                 490                 495
972 Asp Ile Arg Asp Arg Pro Lys Asn Ala His Glu Cys Lys Ala Thr Ile
973         500                 505                 510
975 Asn Val Glu Glu Cys Gly Glu Met Ala Ala Ile Val Asn Gln Leu Leu
976         515                 520                 525
978 Phe Pro Met Trp Lys Ile Thr Cys Thr Gln Cys Gly Glu Leu Leu Glu
979         530                 535                 540
981 Met Leu Ser Gln Glu Glu Glu Leu Glu Ser Phe Arg Arg Lys Arg Ser
982 545                 550                 555                 560
984 Gln Leu Ala Ser Lys Leu Ser Ser Leu His Ile Lys Phe Pro Tyr Val
985                 565                 570                 575
987 Asp His Phe Leu Asn Arg Tyr Glu Asn Ser Leu Asn Arg Met Asn Thr
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RAW SEQUENCE LISTING   ° DATE: 07/20/2004
PATENT APPLICATION: US/10/076,839A   TIME: 11:21:53

Input Set : **A:\Sequence Listing - text 13july04.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

```
988              580                 585                 590
990 Asn Phe Asp Ala His Lys Gln Ile Ala Gln Ile Ile Gly Ser Arg Lys
991         595                 600                 605
993 Glu Ile Pro Phe Ser Asn Leu Glu His Leu Asn Glu Leu Leu Ile Lys
994     610                 615                 620
996 Ser Asp Lys Leu Val Ser Glu Asp Phe Tyr Glu Met Ser Gln Cys Leu
997 625             630                 635                 640
999 Leu Glu Leu Thr Arg Trp His Lys Asn Arg Ser Asp Ser Phe Lys Lys
1000             645                 650                 655
1002 Gly Glu Ile His His Phe Arg Asn Lys Met Ser Gly Lys Ala Gln Phe
1003         660                 665                 670
1005 Asn Phe Ala Leu Met Cys Asp Asn Gln Leu Asp Lys Asn Gly Asn Phe
1006         675                 680                 685
1008 Val Trp Gly Glu Arg Gly Tyr His Ala Lys Arg Phe Phe Leu Asn Phe
1009     690                 695                 700
1011 Phe Glu Lys Val Asp Ser Thr Asp Gly Tyr Lys Lys His Ile Met Arg
1012 705             710                 715                 720
1014 Val Asn Pro Asn Gly Thr Arg Gln Thr Ala Ile Gly Lys Leu Ile Leu
1015             725                 730                 735
1017 Ser Thr Asp Pro Ser Thr Leu Arg Gln Gln Met Lys Gly Ser Pro Ile
1018             740                 745                 750
1020 Thr Arg Val Pro Val Gly Lys Tyr Cys Thr Ser Lys Arg Asp Gly Cys
1021         755                 760                 765
1023 Tyr Val Tyr Pro Ala Cys Cys Val Thr Met Glu Asp Gly Thr Pro Leu
1024     770             775                 780
1026 Phe Ser Asp Ile Lys Met Pro Thr Lys Asn His Leu Val Ile Gly Asn
1027 785             790                 795                 800
1029 Ser Gly Asp Pro Lys Tyr Val Asp Val Pro Ser Ser Ser Ser Asp Met
1030             805         . .        810                 815
1032 Ile Val Ala Lys Glu Gly Tyr Cys Tyr Leu Asn Ile Phe Leu Ala Met
1033         820                 825                 830
1035 Leu Leu Asn Val Asn Glu Ser Glu Ser Lys Ser Phe Thr Lys Lys Val
1036         835                 840                 845
1039 Arg Asp Ile Ile Val Pro Arg Leu Gly Gln Trp Pro Ser Leu Ile Asp
1040     850                 855                 860
1042 Val Ala Thr Glu Cys Tyr Phe Leu Ser Ala Phe His Pro Glu Thr Lys
1043 865             870                 875                 880
1045 Asn Ala Glu Leu Pro Arg Ile Leu Val Asp His Thr Ser Lys Cys Met
1046             885                 890                 895
1048 His Val Ile Asp Ser Tyr Gly Ser Leu Asp Thr Gln Phe His Val Leu
1049         900                 905                 910
1051 Lys Ala Asn Thr Val Ser Gln Leu Ile Lys Phe Ala Asp Asn Asp Leu
1052         915                 920                 925
1054 Asp Ser Glu Leu Lys His Tyr Leu Val Gly Gly Asp Leu His Ser Lys
1055     930                 935                 940
1057 Gln Ala Pro Gln Cys Ser Ile Lys Leu Leu Cys Lys Cys Ile Tyr Arg
1058 945             950                 955                 960
1060 Pro Lys Leu Met Arg Gln Cys Ile Glu Glu Glu Pro Phe Leu Leu Ile
1061             965 ·                 970                 975
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   1063 Leu Ala Cys Ile Ser Pro Gly Val Leu Leu Ala Leu Tyr Asn Ser Gln
   1064         980                 985                 990
   1067 His Leu Glu Leu Ala Leu Lys Tyr Trp Met Ser Lys Gln Gln Ser Val
   1068         995                 1000                1005
   1070 Ala Ala Leu Phe Ala Met Ile His Gly Leu Ala Ala Lys Val Thr Val
   1071     1010                1015                1020
   1073 Ala Gln Thr Leu Asn Glu Gln Arg Leu Ile Leu Glu Arg Gly Ala Arg
   1074 1025                1030                1035                1040
   1076 Asn Leu Ile Ser Val Met Glu Thr Ile His Met Thr Ser His Ser Tyr
   1077             1045                1050                1055
   1079 Gln Pro Ala Leu Leu Gln Leu Gln Val Met Ala Asn Arg Arg Asp Met
   1080             1060                1065                1070
   1082 Asn Ser Thr Leu Asp Leu Ala Gly Phe Ser Ile Leu Gln Ser Glu Asp
   1083             1075                1080                ⤆1085
   1085 Ser Met Tyr Trp Met Glu Lys Ser Tyr Leu Met Glu Leu Glu Asp Ser
E--> 1086      1090                1095                1100
   1088 Trp Asn Asp Leu Lys Trp Leu Glu Lys Leu Gln Glu Met Trp Arg Leu
E--> 1089 1105                1110                1115                1120
   1091 Ser Lys Tyr Ser Ile Ser Gly Ile Ser Gln Leu Ser Met Lys Gly Ala
E--> 1092             1125                1130                1135
   1095 Thr Asp Leu Gly Gly Arg Tyr Ser Val Ser Ala Lys Gln Phe Ile Thr
E--> 1096         1140                1145                1150
   1098 Ser Val Met Lys Pro Val Lys Lys Ser Cys Val Lys Ala Arg Asp Thr
E--> 1099         1155                1160                1165
   1101 Cys Lys Glu Val Ile Ile Asn Thr Thr Ser Trp Thr Phe Arg Ala Thr
E--> 1102     1170                1175                1180
   1104 Phe Ser Leu Cys Arg Trp Cys Leu Pro Asp Cys Leu Lys Phe Ile Asn
E--> 1105 1185                1190                1195                1200
   1107 Met Leu Ile Val Ile Ser Leu Ile Leu Ser Ile Trp His Ser Ala Asn
E--> 1108             1205                1210                1215
   1110 Ser Ile Ser Phe Asp Tyr Ala Gln Met Lys Arg Glu Lys Gln Val Asn
E--> 1111         1220                1225                1230
   1113 Ile Glu Lys Val Leu Met Asn Asn Leu Val Ala Leu His Lys Glu Gln
E--> 1114         1235                1240                1245
   1116 Ile Lys Ile Asn Pro Asp Leu Thr Lys Glu Glu Phe Lys Glu Tyr Ile
E--> 1117     1250                1255                1260
   1119 Ala Arg Ser Arg Pro Glu Leu Ile Ala Leu Val Asn Lys Glu Leu Gln
E--> 1120 1265                1270                1275                1280
   1123 Glu Glu Val Asp His Gln Ala Lys Arg Lys Gly Glu Gln Asn Leu Glu
E--> 1124             1285                1290                1295
   1126 Lys Ile Ile Ala Phe Val Ala Leu Val Met Met Ile Phe Asp Ser Glu
E--> 1127         1300                1305                1310
   1129 Lys Ser Asp Cys Val Tyr Lys Thr Leu Asn Lys Leu Arg Asn Leu Val
E--> 1130         1315                1320                1325
   1132 Ala Thr Cys Asp Glu Pro Val Ala His Gln Ser Leu Asp Asp Ile Gln
E--> 1133     1330                1335                1340
   1135 Asp Ile Leu Thr Asp Lys Glu Thr Thr Ile Asp Phe Asp Leu Asp Cys
E--> 1136 1345                1350                1355                1360
   1138 Glu Gly Ser Lys Val Thr Glu Phe Lys Glu Met Asn Phe Ala Ala Trp
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E--> 1139              1365           1370              1375
     1141 Trp Glu Lys Gln Leu Gln Cys Asp Arg Val Val Pro His Tyr Arg Thr
E--> 1142         1380              1385              1390
     1144 Thr Gly Lys Phe Ile Glu Phe Thr Arg Glu Ser Cys Val Ser Val Ser
E--> 1145         1395           1400              1405
     1147 Asn Thr Ile Ser His Ala Pro Glu Lys Glu Trp Ile Val Arg Gly Gly
E--> 1148     1410           1415              1420
     1151 Val Gly Ser Gly Lys Ser Thr Gly Leu Pro Phe Ala Leu Ser Ser Lys
E--> 1152 1425           1430           1435              1440
     1154 Gly Ala Val Leu Met Leu Glu Pro Thr Arg Pro Leu Ala Glu Asn Val
E--> 1155         1445           1450              1455
     1157 Ser Arg Gln Leu Arg Gln His Pro Phe Tyr Ala Asn Pro Thr Leu Arg
E--> 1158         1460           1465              1470
     1160 Met Arg Gly Met Ser Ser Phe Gly Ser Ser Asn Ile Cys Ile Met Thr
E--> 1161         1475           1480              1485
     1163 Ser Gly Phe Ala Phe Asn Tyr Phe Ala Asn Asn Pro Leu Lys Leu Ser
E--> 1164     1490           1495              1500
     1166 Asp Phe Glu Phe Val Ile Ile Asp Glu Cys His Val Leu Asp Ser Asn
E--> 1167 1505           1510           1515              1520
     1169 Ala Met Ala Phe Val Cys Leu Leu Lys Glu His Asn Tyr Asp Gly Lys
E--> 1170         1525           1530              1535
     1172 Leu Leu Lys Val Ser Ala Thr Pro Gln Gly Arg Glu Cys Glu Phe His
E--> 1173         1540           1545              1550
     1175 Thr Gln His Pro Val Ser Ile His Ile Glu Glu Gln Leu Ser Phe Gln
E--> 1176         1555           1560              1565
     1179 Ala Phe Cys Glu Ala Gln Gly Thr Gly Ser Ala Arg Asp Val Ile Asn
E--> 1180     1570           1575              1580
     1182 Lys Gly Asp Asn Ile Leu Val Tyr Val Ala Ser Tyr Asn Glu Val Asp
E--> 1183 1585           1590           1595              1600
     1185 Gln Leu Ser Lys Met Leu Gly Asp Lys Gly Tyr Leu Val Thr Lys Val
E--> 1186         1605           1610              1615
     1188 Asp Gly Arg Thr Met Lys Ile Gly Ser Thr Asp Ile Val Thr Lys Gly
E--> 1189         1620           1625              1630
     1191 Ser Ser Gln Lys Lys His Phe Ile Val Ala Thr Asn Ile Ile Glu Asn
E--> 1192         1635           1640              1645
     1194 Gly Val Thr Leu Asp Val Asp Val Val Val Asp Phe Gly Leu Lys Val
E--> 1195     1650           1655              1660
     1197 Thr Ala Glu Ile Asp Tyr Asp Asn Arg Cys Val Asn Tyr Thr Lys Thr
E--> 1198 1665           1670           1675              1680
     1200 Ser Ile Ser Tyr Gly Glu Arg Ile Gln Arg Leu Gly Arg Val Gly Arg
E--> 1201         1685           1690              1695
     1203 His Lys Lys Gly His Ala Met Arg Ile Gly Thr Thr Ile Lys Gly Leu
E--> 1204     1700           1705              1710
     1206 Ile Glu Ile Pro Ser Leu Val Ala Thr Gln Ala Ala Phe Gln Cys Phe
E--> 1207         1715           1720              1725
     1209 Thr Tyr Gly Leu Pro Val Met Thr Gln Gly Val Ser Val Asn Ser Leu
E--> 1210     1730           1735              1740
     1213 Ser Asn Cys Thr Val Arg Gln Ala Arg Val Met Ser Arg Phe Glu Leu
E--> 1214 1745           1750           1755              1760
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     1216 Pro Pro Tyr Phe Met Ala Ser Leu Val Tyr His Asp Gly Ser Met His
E--> 1217             1765                1770                1775
     1219 Pro Glu Ile His Lys His Leu Ile Pro Tyr Lys Leu Asp Glu Ser Glu
E--> 1220             1780                1785                1790
     1222 Ile Gln Leu Ser Ala Met Ala Phe Asn Phe Thr Val Thr Ser Ile Trp
E--> 1223             1795                1800                1805
     1225 Leu Asp Cys Lys Phe Tyr Asp Ser Ile Gly Ile His Leu Asp Leu Pro
E--> 1226        1810                1815                1820
     1228 Arg Glu Ala Lys Ile Pro Phe His Cys Arg Glu Phe Pro Asp Met Lys
E--> 1229 1825                1830                1835                1840
     1231 Tyr Arg His Leu Trp Glu Asp Ile Leu Lys Ile Lys Ser Ile Asn Cys
E--> 1232             1845                1850                1855
     1234 Phe Gly Arg Met Ser Val Val Ser Ala Thr Lys Val Ala Tyr Thr Leu
E--> 1235             1860                1865                1870
     1237 Lys Thr Asp Ile His Ser Ile Gly Lys Thr Leu Gly Tyr Ile Asp Ala
E--> 1238             1875                1880                1885
     1240 Leu Leu Gln Glu Glu Tyr Arg Lys Gln His His Phe Lys Ala Met Thr
E--> 1241        1890                1895                1900
     1244 Ser Asn Ala Cys Ser Gly Asn Thr Phe Ser Met Leu Ser Ile Ala Asn
E--> 1245 1905                1910                1915                1920
     1247 Ala Ile Arg Asn His Tyr Ala Lys Asp Tyr Thr Ala Gly Asn Ile Gln
E--> 1248             1925                1930                1935
     1250 Lys Leu Gln Ala Ala Lys Asn Gln Ile Leu Glu Phe Val Asn Leu Asn
E--> 1251             1940                1945                1950
     1253 Leu Asp Pro Ser Ala Lys Cys Gly Phe Gln Glu Phe Gly Ala Leu Glu
E--> 1254             1955                1960                1965
     1256 Leu Val Thr His Gln Ser Arg Gln Glu Ile Ser Lys Phe Leu Asn Leu
E--> 1257        1970                1975                1980
     1259 Arg Gly Lys Trp Asn Lys Ser Leu Ile Thr Arg Asp Ile Leu Val Leu
E--> 1260 1985                1990                1995                2000
     1262 Leu Gly Val Thr Ile Gly Gly Phe Trp Met Ile Trp Asp Lys Phe Lys
E--> 1263             2005                2010                2015
     1265 Ser Asn Ile Glu Glu Val His His Glu Gly Lys Arg Lys Thr Gln Lys
E--> 1266             2020                2025                2030
     1268 Leu Lys Phe Arg Asp Ala Arg Asp Lys Lys Met Gly Arg Glu Val Tyr
E--> 1269             2035                2040                2045
     1271 Gly Asp Asp Gly Thr Ile Glu His Tyr Phe Gly Ser Ala Tyr Val Lys
E--> 1272        2050                2055                2060
     1274 Arg Gly Ala Val Lys Gly Gln Lys Arg Gly Met Gly Glu Lys Ser Arg
E--> 1275 (1065) 2065           2070                2075                2080
     1277 Arg Phe Val Ser Met Tyr Gly Val Asn Leu Glu Asp Phe Ala Phe Ile
E--> 1278             2085                2090                2095
     1280 Arg Tyr Ile Asp Pro Ile Thr Gly Ala Thr Arg Asp Glu Ser Pro Leu
E--> 1281             2100                2105                2110
     1283 Thr Asp Val Glu Leu Val Gln Ala His Phe Gly Glu Ile Arg Asp Lys
E--> 1284             2115                2120                2125
     1286 Met Leu Asp Glu Gly Leu Ile Asp Arg Gln His Ile Leu Asn Lys Pro
E--> 1287        2130                2135                2140
     1289 Gly Leu Thr Ala Tyr Leu Val Lys Asp Gly Val Lys Ser Ile Met Lys
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E--> 1290 2145             2150             2155             2160
     1293 Val Asp Leu Gln Pro His Asn Pro Leu Leu Ile Cys Lys Asn Lys Ala
E--> 1294             2165             2170             2175
     1296 Thr Ile Ala Gly Phe Pro Glu Lys Glu Phe Val Leu Arg Gln Thr Asp
E--> 1297        2180             2185             2190
     1299 Lys Ala Tyr Glu Val Ser Arg Glu Glu Leu Pro Glu Arg Asn Glu Asp
E--> 1300        2195             2200             2205
     1302 Val Ser Phe Glu Gly Ala Ser Ser Val Lys Gly Leu Arg Asp Tyr Asn
E--> 1303        2210             2215             2220
     1305 Gly Val Ala Ser Ala Ile Cys Gln Leu Thr Asn Asn Ser Asn Gly Arg
E--> 1306 2225             2230             2235             2240
     1308 Ser Thr Thr Thr Tyr Gly Val Gly Phe Gly Ser Tyr Ile Ile Val Asn
E--> 1309             2245             2250             2255
     1311 Arg His Leu Phe Lys Glu Asn Asn Gly Asn Leu Leu Ile Lys Ser Thr
E--> 1312        2260             2265             2270
     1314 His Gly Asn Phe Asn Ile Arg Asn Ser Lys Gln Ile Lys Val Val Gly
E--> 1315        2275             2280             2285
     1317 Val Glu Asp Arg Asp Ile Ala Ile Leu Gln Met Pro Lys Asp Phe Pro
E--> 1318        2290             2295             2300
     1321 Pro Phe Ala Gln Arg Leu Arg Phe Arg Asn Pro Ile Val Gly Glu Ser
E--> 1322 2305             2310             2315             2320
     1324 Ile Cys Leu Val Gly Asn Thr Phe Gln Glu Lys Tyr Asn Ala Ser Ile
E--> 1325             2325             2330             2335
     1327 Val Ser Glu Thr Ser Lys Thr Phe Pro Arg Val Glu Gly Ser Phe Trp
E--> 1328        2340             2345             2350
     1330 Lys His Trp Ile Asn Thr Thr Glu Gly His Cys Gly Leu Pro Leu Val
E--> 1331        2355             2360             2365
     1333 Ser Val Thr Asp Gly Phe Ile Val Gly Ile His Ser Leu Met Ser His
E--> 1334        2370             2375             2380
     1336 Lys Tyr Asp His Asn Tyr Phe Ser Asn Phe Asp Asp Ala Phe Glu Gly
E--> 1337 2385             2390             2395             2400
     1339 Asp Tyr Ile Asn Lys Leu Lys Glu Leu Lys Trp Glu Gln Asn Trp Thr
E--> 1340             2405             2410             2415
     1342 Tyr Asn Val Asn Thr Val Ser Trp Gly Asn Met Lys Leu Gln Asp Ser
E--> 1343        2420             2425             2430
     1345 Ala Pro Cys Lys Glu Phe Lys Thr Thr Lys Leu Ile Ser Asp Leu Cys
E--> 1346        2435             2440             2445
     1349 Thr Glu Pro Val Cys Ala Gln Ser Ser Asn Gln Val Arg Trp Leu Tyr
E--> 1350        2450             2455             2460
     1352 Asn Gln Leu Glu Gly Asn Leu Lys Ala Val Ala Thr Ile Pro Asn Asn
E--> 1353 2465             2470             2475             ·2480
     1355 Phe Val Thr Lys His Ile Val Lys Gly Arg Cys Lys Leu Phe Glu Leu
E--> 1356             2485             2490             2495
     1358 Tyr Leu Gln Thr Arg Ser Glu Ala Asn Glu Phe Phe Lys Pro Leu Met
E--> 1359        2500             2505             2510
     1361 Gly Phe Tyr Gly Lys Ser Gly Leu Asn Lys Glu Ala Tyr Ile Lys Asp
E--> 1362        2515             2520             2525
     1364 Leu Phe Lys Tyr Ser Ser Glu Ile Pro Ile Gly Glu Val Asp Thr Glu
E--> 1365        2530             2535             2540
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       1367 Arg Phe Glu Asp Ala Val Gly Gln Val Ile Glu Ile Met Met Gln Trp
E--> 1368 2545                2550                2555                2560
       1370 Asn Phe Arg Glu Cys Lys Tyr Ile Thr Asp Cys Asp Gln Ile Phe Glu
E--> 1371                2565                2570                2575
       1373 Ser Leu Asn Met Lys Ala Ala Val Gly Ala Leu Tyr Ser Gly Lys Lys
E--> 1374                2580                2585                2590
       1377 Lys Ala Tyr Phe Glu Asn Ser Thr Phe Asp Asp Arg Asn His Leu Leu
E--> 1378           2595                2600                2605
       1380 Gln Leu Ser Cys Leu Arg Leu Phe Lys Gly Asp Leu Gly Ile Trp Asn
E--> 1381      2610                2615                2620
       1383 Gly Ser Leu Lys Ala Glu Leu Arg Pro Ile Glu Lys Val Glu Ala Asn
E--> 1384 2625                2630                2635                2640
       1386 Lys Thr Arg Thr Phe Thr Ala Ala Pro Ile Glu Thr·Leu Leu Gly Gly
E--> 1387                2645                2650                2655
       1389 Lys Val Cys Val Asp Asp Phe Asn Asn Gln Phe Tyr Asp Leu Asn Met
E--> 1390                2660                2665                2670
       1392 Lys Cys Pro Trp Thr Val Gly Met Thr Lys Phe Tyr Cys Gly Trp Asn
E--> 1393                2675                2680                2685
       1395 Asp Leu Leu Gly Lys Leu Pro Asp Gly Trp Ile Tyr Arg Asp Ala Asp
E--> 1396           2690                2695                2700
       1398 Gly Ser Arg Phe Asp Ser Ser Leu Thr Pro Tyr Leu Leu Asn Ala Val
E--> 1399 2705                2710                2715                2720
       1401 Leu Gly Ile Arg Glu Phe Phe Met Glu Asp Trp Asp Ile Gly Val Gln
E--> 1402                2725                2730                2735
       1405 Met Leu Arg Asn Leu His Thr Glu Ile Ile Tyr Thr Pro Ile Ala Thr
E--> 1406                2740                2745                2750
       1408 Pro Asp Gly Thr Val Val Lys Lys Phe Arg Gly Asn Asn Ser Gly Gln
E--> 1409           2755                2760                2765
       1411 Pro Ser Thr Val Val Asp Asn Thr Leu Met Val Cys Ile Cys Val Gln
E--> 1412      2770                2775                2780
       1414 Tyr Ser Leu Ile Met Asn Ser Val Lys Phe Glu Asn Gln Asp Asp Val
E--> 1415 2785                2790                2795                2800
       1417 Cys Arg Tyr Phe Val Asn Gly Asp Asp Leu Leu Leu Ala Ile Asn Pro
E--> 1418                2805                2810                2815
       1420 Lys Phe Ile His Ile Leu Asp Ser Phe Lys Val His Phe Ala Asn Leu
E--> 1421                2820                2825                2830
       1423 Gly Leu Asp Tyr Asp Phe Ser His Arg Thr Lys Asp Lys Gly Glu Leu
E--> 1424           2835                2840                2845
       1426 Trp Phe Met Ser His Lys Gly Val Lys Leu Asn Asp Met Tyr Ile Pro
E--> 1427      2850                2855                2860
       1429 Lys Leu Glu Pro Glu Arg Val Val Ser Ile Leu Glu Trp Asp Arg Ser
E--> 1430 2865                2870                2875                2880
       1432 Val Lys Pro Glu His Arg Leu Glu Ala Ile Cys Ala Ser Met Ile Glu
E--> 1433                2885                2890                2895
       1435 Ala Trp Gly Tyr Pro Arg Leu Ile His Glu Ile Arg Lys Phe Tyr Ala
E--> 1436                2900                2905                2910
       1438 Trp Val Leu Glu Gln Ala Pro Tyr Asn His Leu Ala Ser Glu Gly Lys
E--> 1439                2915                2920                2925
       1441 Ala Pro Tyr Ile Ser Glu Thr Ala Leu Lys Arg Leu Tyr Thr Cys Glu
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E--> 1442      2930              2935              2940
     1444 Glu Gly Ser Ala Asp Glu Ile Met Ser Tyr Leu Glu Met Cys Ala Ser
E--> 1445 2945              2950              2955              2960
     1447 Asp Leu Asn Glu Asp Glu Tyr Phe Asp Asp Glu Asp Val Ser His Gln
E--> 1448              2965              2970              2975
     1450 Ser Ala Leu Asp Ala Gly Lys Pro Thr Ala Glu Asn Lys Lys Asp Asp
E--> 1451              2980              2985              2990
     1453 Glu Glu Arg Lys Asn Lys Glu Glu Lys Gln Glu Asn Lys Asn Lys Asn
E--> 1454         2995              3000              3005
     1456 Lys Glu Val Glu Lys Lys His Glu Lys Thr Ser Asn Ser Ala Ser Gly
E--> 1457      3010              3015              3020
     1459 Ala Ile Val Ser Asn Asn Glu Lys Asp Lys Asp Val Asp Val Gly Ser
E--> 1460 3025              3030              3035              3040
     1462 Ser Gly Ser Phe Ile Ile Pro Arg Ile Lys Ser Ile Ser Asn Lys Leu
E--> 1463              3045              3050              3055
     1465 Thr Met Pro Lys Val Lys Gly Lys Gly Ile Leu Asn Leu Glu Phe Leu
E--> 1466              3060              3065              3070
     1468 Leu Gln Tyr Thr Pro Asp Gln Val Asp Ile Ser Asn Thr Arg Ala Ser
E--> 1469         3075              3080              3085
     1471 Ile Ser Gln Phe Asn Thr Trp Tyr Asn Ala Val Lys Glu Ser Tyr Gly
E--> 1472      3090              3095              3100
     1474 Val Ser Asp Glu Glu Met Gly Ile Ile Leu Asn Gly Leu Met Val Trp
E--> 1475 3105              3110              3115              3120
     1477 Cys Ile Glu Asn Gly Thr Ser Pro Asn Ile Asn Gly Met Trp Phe Met
E--> 1478              3125              3130              3135
     1480 Met Gln Gly Glu Glu Gln Ile Glu Tyr Pro Leu Gln Pro Ile Val Glu
E--> 1481              3140              3145              3150
     1483 Asn Ala Lys Pro Thr Leu Arg Gln Ile Met Ala His Phe Ser Asn Val
E--> 1484         3155              3160              3165
     1486 Ala Glu Ala Tyr Ile Glu Lys Arg Asn Tyr Glu Lys Pro Tyr Met Pro
E--> 1487      3170              3175              3180
     1490 Arg Tyr Gly Ile Gln Arg Asn Leu Thr Asp Met Ser Leu Ala Arg Tyr
E--> 1491 3185              3190              3195              3200
     1493 Ala Phe Asp Phe Tyr Glu Met Thr Ser Arg Thr Pro Ala Arg Ala Arg
E--> 1494              3205              3210              3215
     1496 Glu Ala His Ile Gln Met Lys Ala Ala Ala Leu Arg Asp Ala Asn Asn
E--> 1497         3220              3225              3230
     1499 Lys Met Phe Gly Leu Asp Gly Lys Val Gly Asn Ala Thr Glu Asn Thr
E--> 1500      3235              3240              3245
     1502 Glu Arg His Thr Ala Asp Asp Val Asn His Asn Thr His Ala Phe Thr
E--> 1503      3250              3255              3260
     1505 Gly Val Arg Tyr Tyr
E--> 1506 3265
```

VERIFICATION SUMMARY   DATE: 07/20/2004
PATENT APPLICATION: **US/10/076,839A**   TIME: 11:21:55

Input Set : **A:\Sequence Listing - text 13july04.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

L:40 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:870 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:10142
L:1086 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1089 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1092 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1096 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1099 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1102 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1105 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1108 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1111 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1114 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1117 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1120 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1124 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1127 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1130 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1133 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1136 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1139 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1142 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1145 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1148 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1152 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1155 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1158 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1161 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1164 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1167 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1170 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1173 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1176 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1180 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1183 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1186 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1189 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1192 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1195 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1198 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1201 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1204 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1207 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1210 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1214 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1217 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1220 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1223 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1226 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2

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L:1229 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1232 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1235 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1238 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
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L:1245 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1248 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1251 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1254 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1257 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1260 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1263 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1266 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1269 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1272 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1275 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1278 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1281 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1284 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1287 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1290 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1294 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1297 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1300 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1303 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1306 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1309 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1312 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1315 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1318 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
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L:1328 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
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L:1362 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1365 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1368 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1371 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1374 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1378 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
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VERIFICATION SUMMARY   DATE: 07/20/2004
PATENT APPLICATION: **US/10/076,839A**   TIME: 11:21:55

Input Set : **A:\Sequence Listing - text 13july04.txt**
Output Set: **N:\CRF4\07202004\J076839A.raw**

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L:1381 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1384 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1387 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1390 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1393 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1396 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1399 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1402 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1406 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1409 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1412 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1415 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1418 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1421 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1424 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1427 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1430 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1433 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1436 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1439 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1442 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1445 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1448 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1451 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1454 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1457 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1460 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1463 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1466 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1469 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1472 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1475 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1478 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1481 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1484 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1487 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1491 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1494 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1497 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1500 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1503 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1506 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
L:1512 M:283 W: Missing Blank Line separator, <220> field identifier
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